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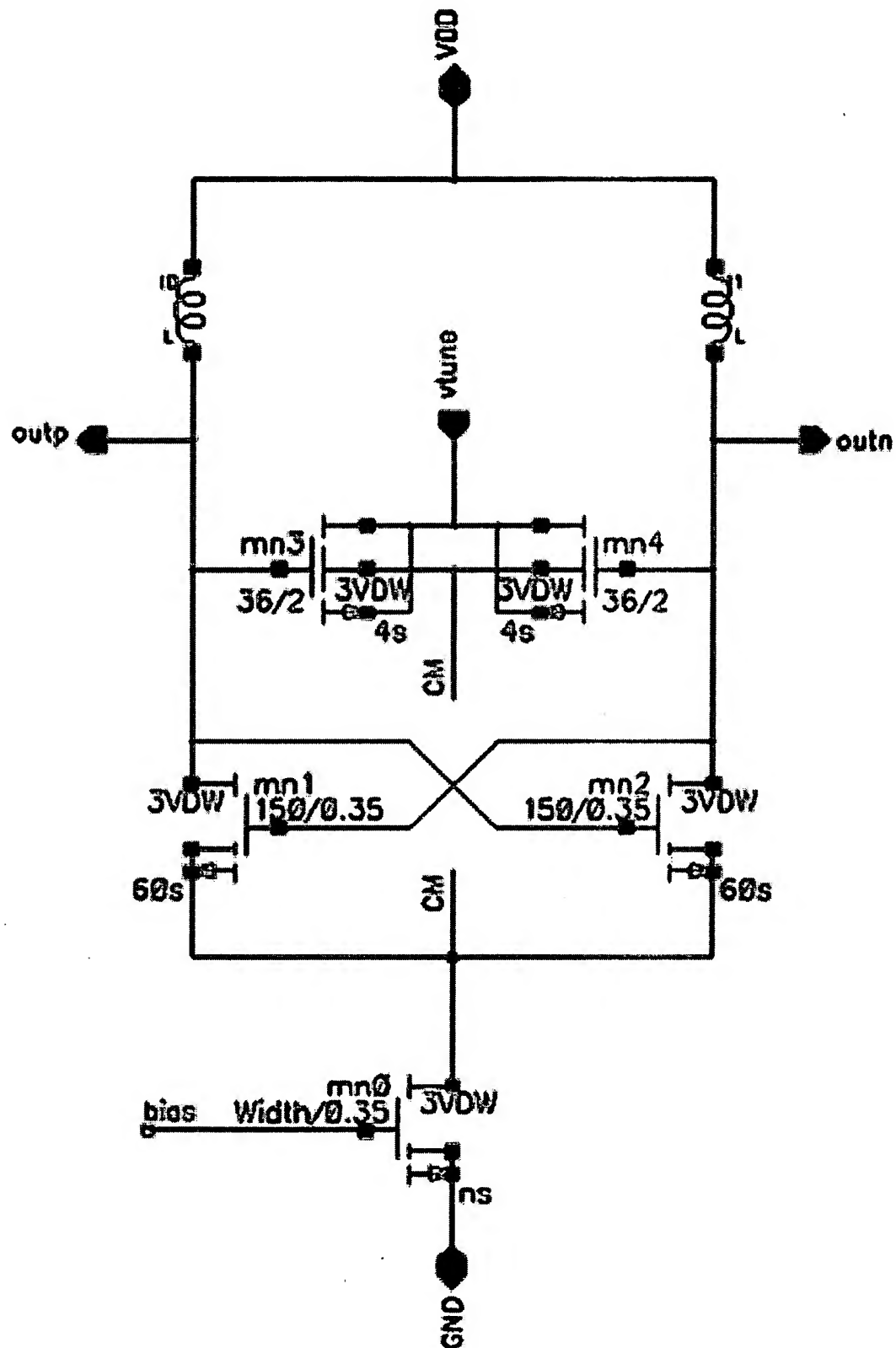
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**Figure 1**

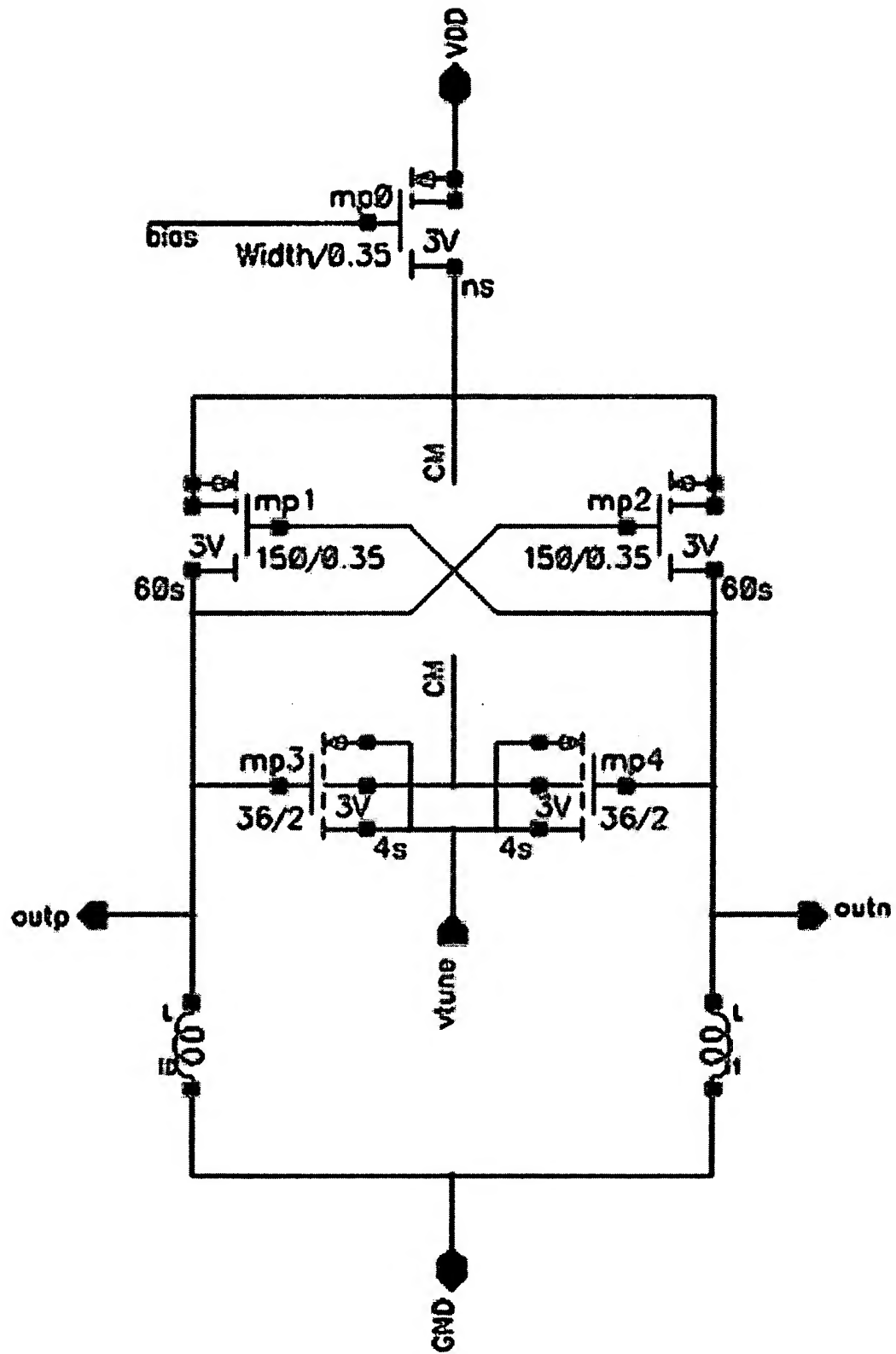


Figure 2

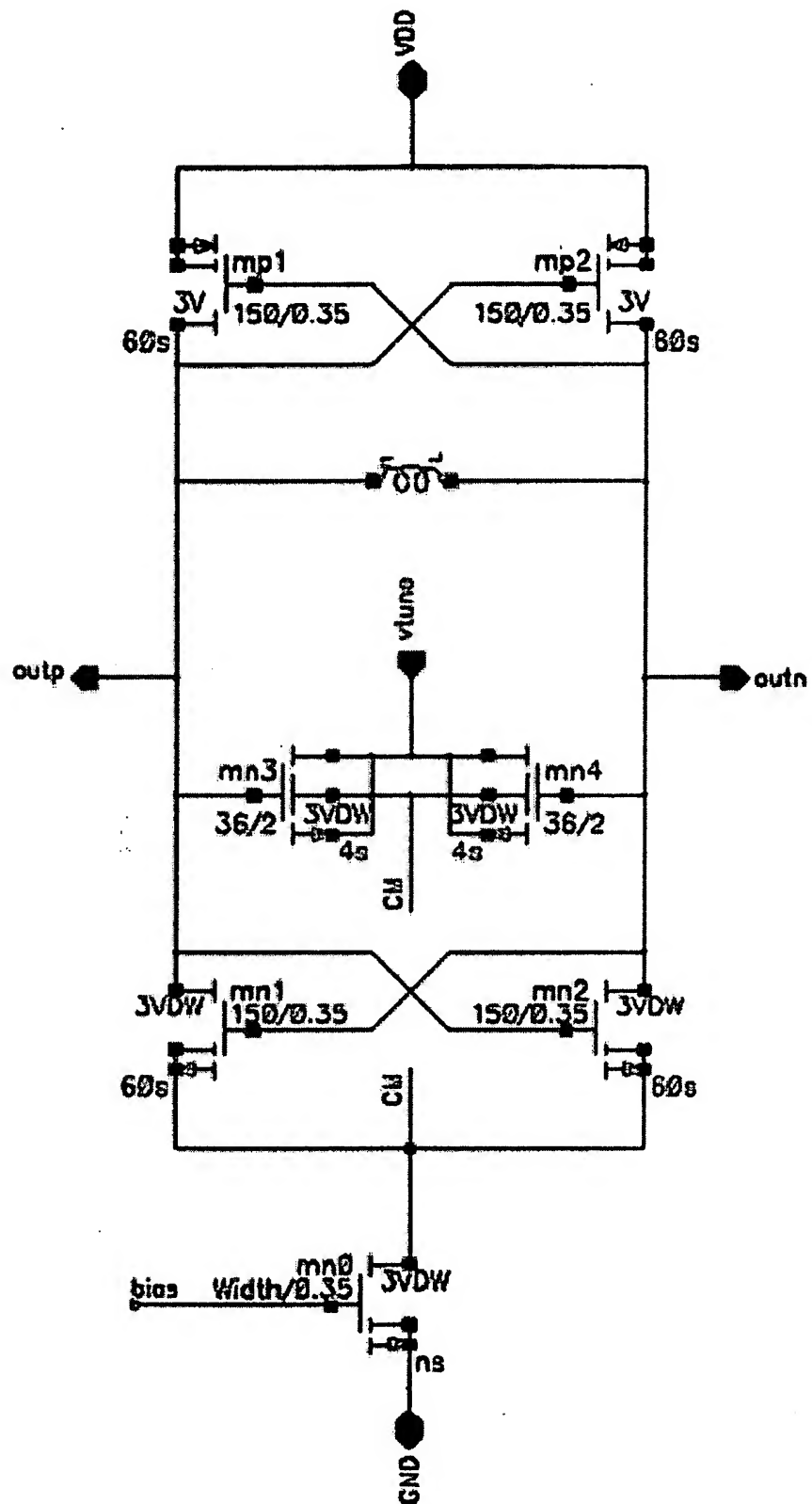


Figure 3

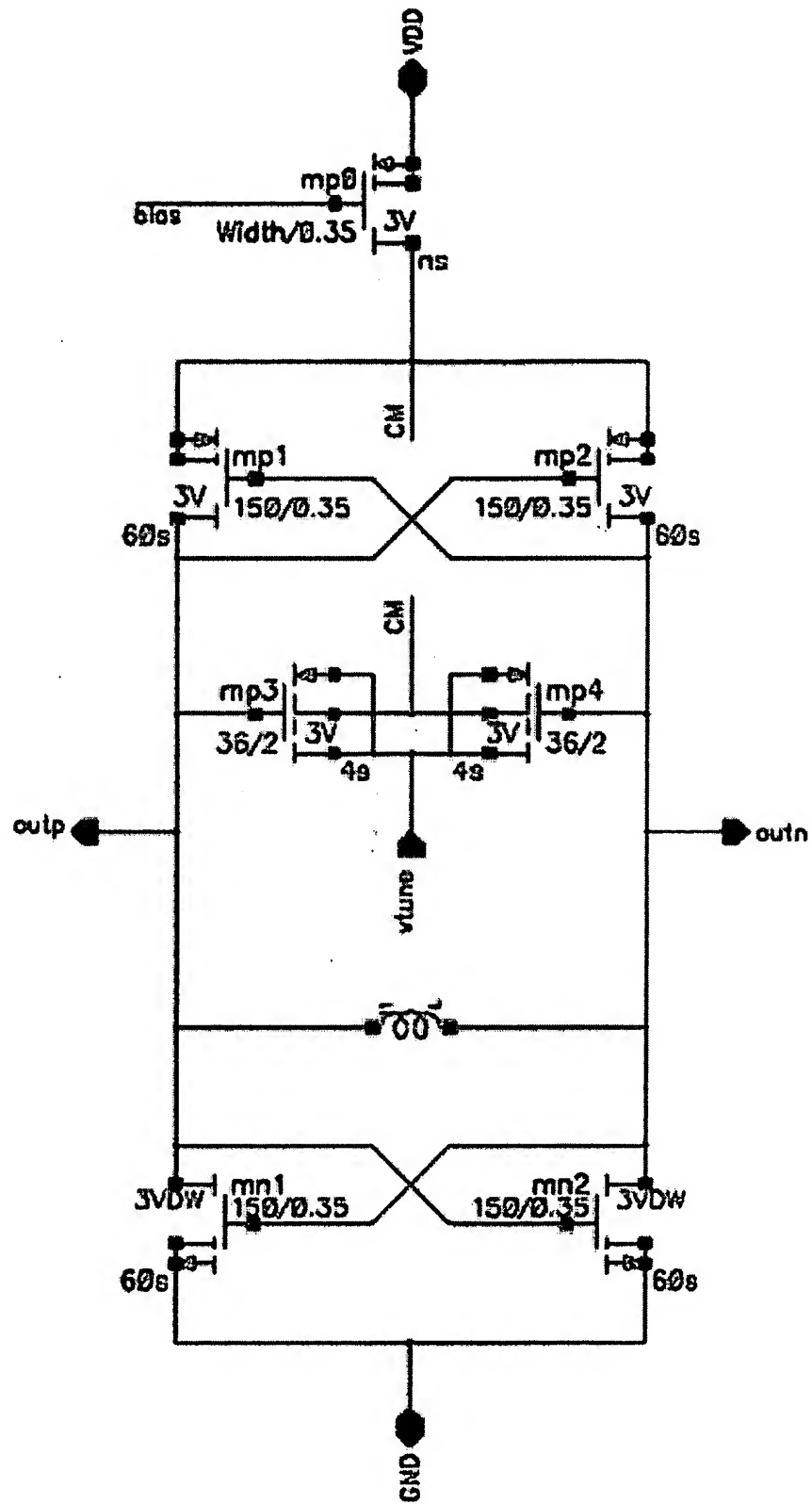
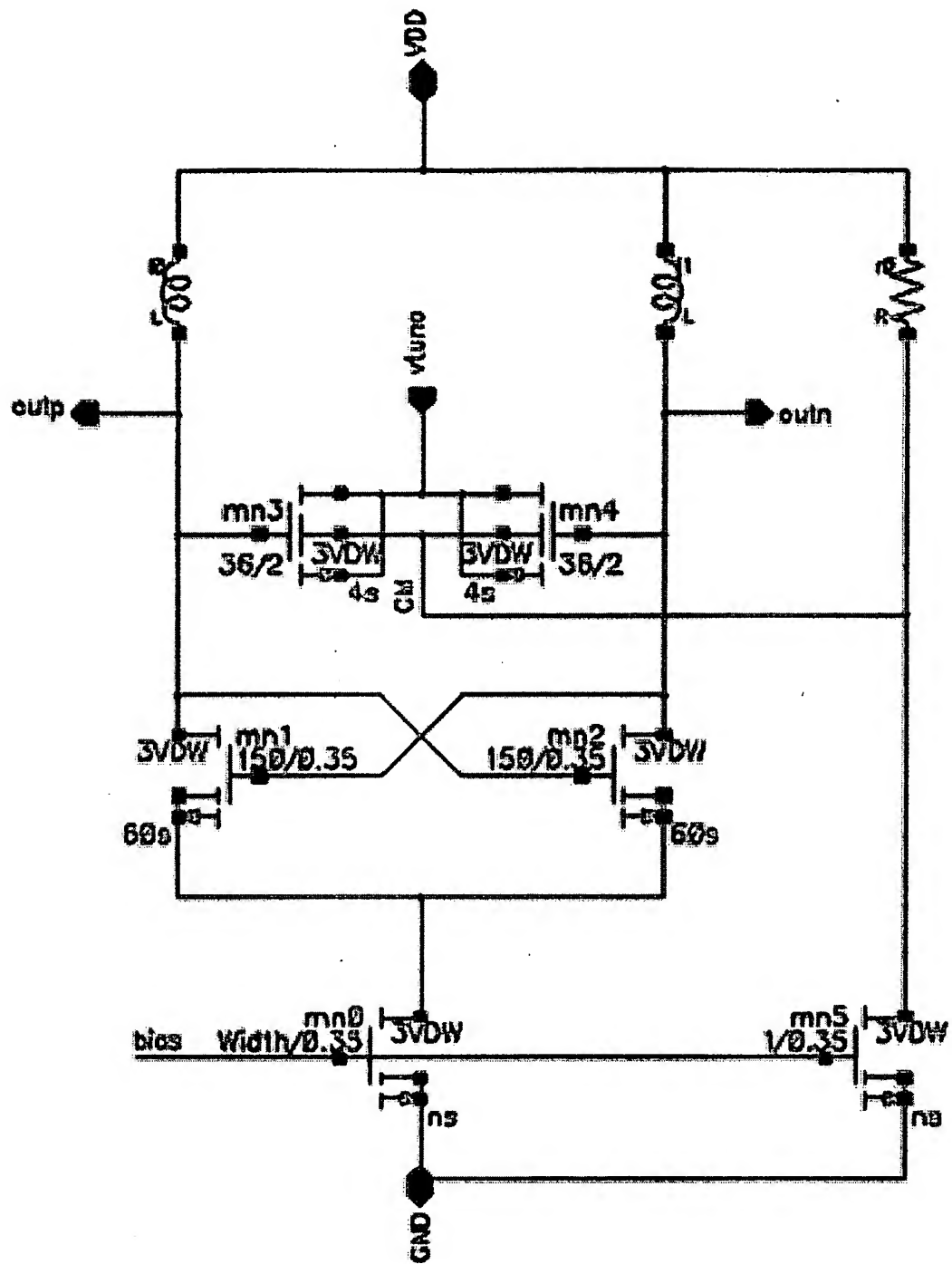


Figure 4





Calculate small swing tuning range, varactor Q, C(V) for D-S 80-230, 1-35DS  
 36.00MHz, 2.0k, 40, 1.150S varactor, ideal 0.16nH inductor tank  
 Process: nominal Temp: 25.0 deg C  
 Min Vtune: 1.00V Pc: 7.763 GHz VarQ: 372.8 Itank: 4739.40 Ohms -1603 MHz/V  
 Max Vtune: -2.00V Pc: 10.463 GHz VarQ: 1970.4 Itank: 44099.77 Ohms 11 MHz/V  
 Tuning Range: 2690.29 MHz 29.54 % about Favg: 9.108 GHz GainRatio: -215.5 dB

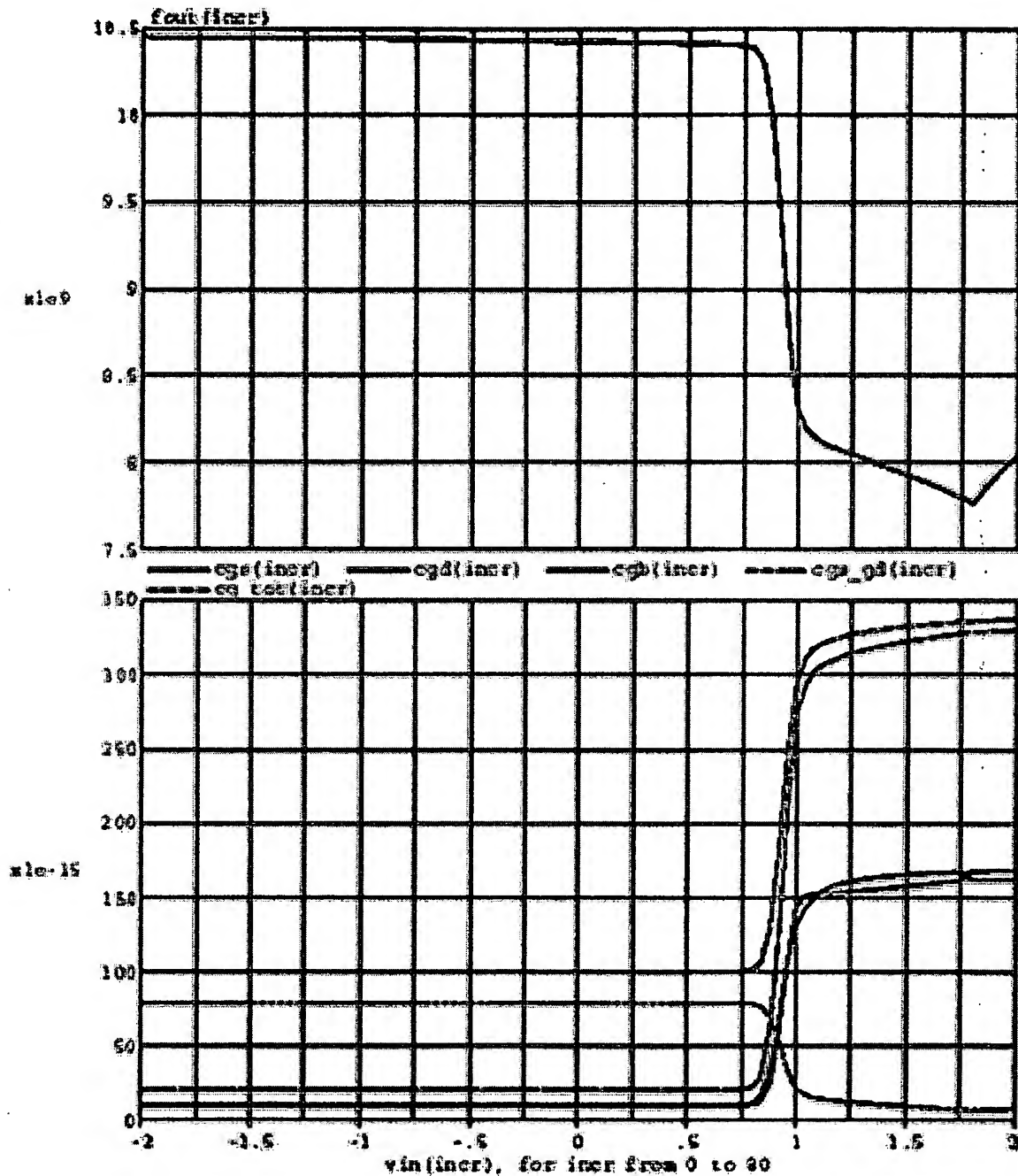


Figure 7



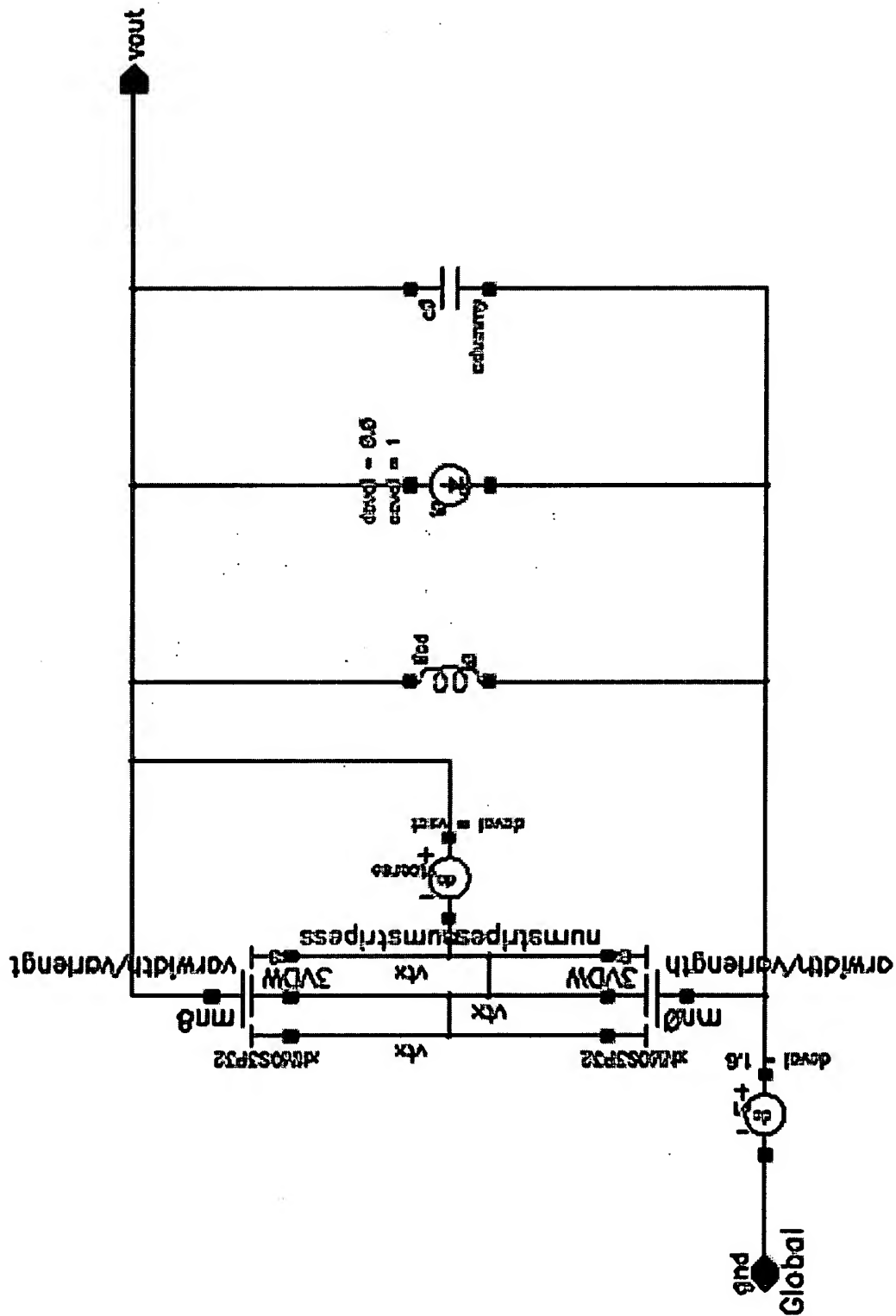


Figure 8

Calculate small-signal tuning range, varactor Q, etc. for DSB-SSB mixer  
 36.99GHz, 0.9L, 0.1 pF MOS varactor, ideal 0.16nH inductor tank  
 Process: nominal Temp: 25.0 deg C  
 Min Vtune: -2.00V P<sub>1</sub>: 9.169 GHz VarQ: 183.9 Z<sub>tank</sub>: 3350.45 Ohms -116 MHz/V  
 Max Vtune: 0.45V P<sub>2</sub>: 10.637 GHz VarQ: 750.6 Z<sub>tank</sub>: 18130.23 Ohms 151 MHz/V  
 Tuning Range: 1469.63 MHz 14.93 % about Vavg: 9.903 GHz GainRatio: -0.1:1

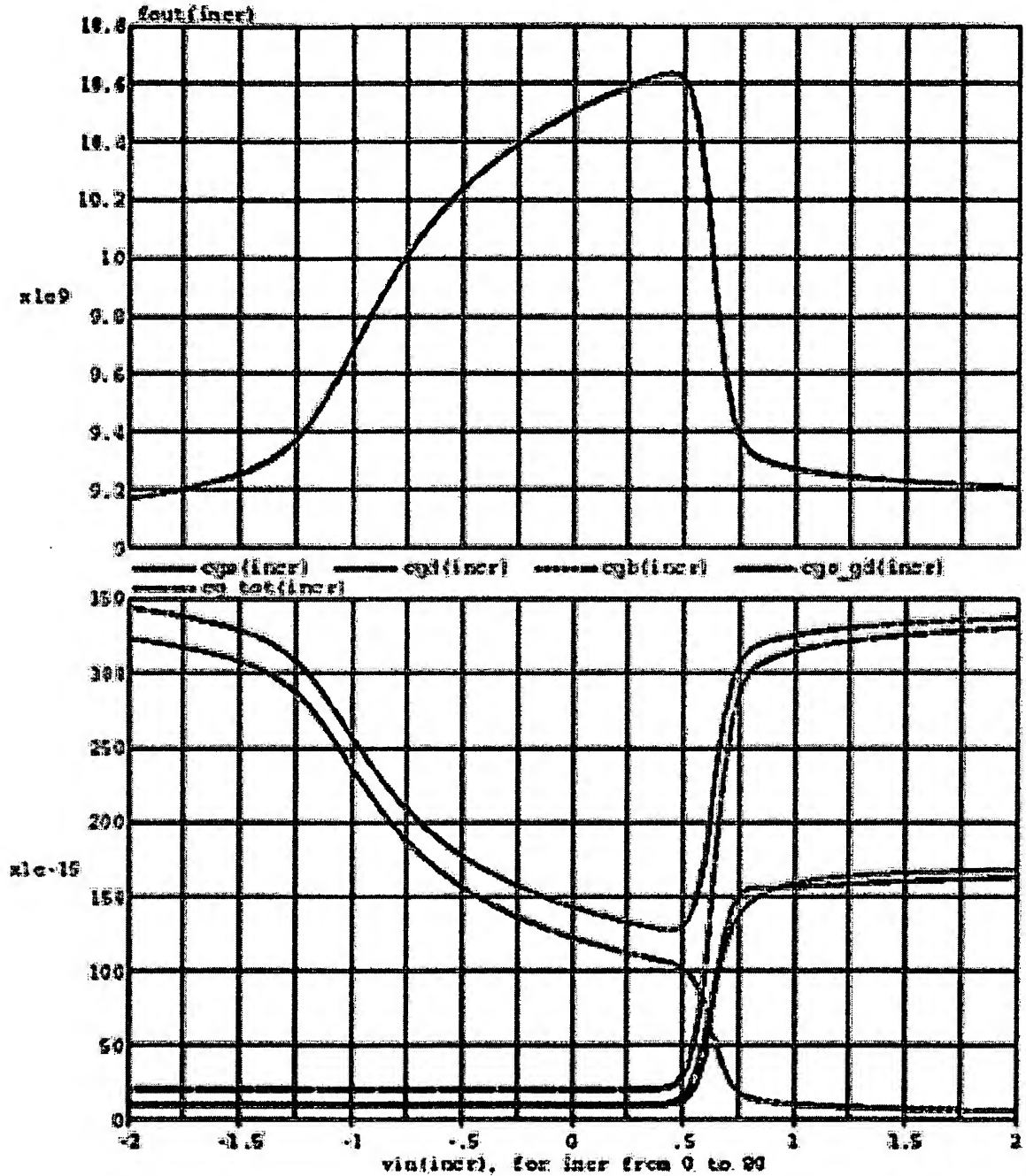
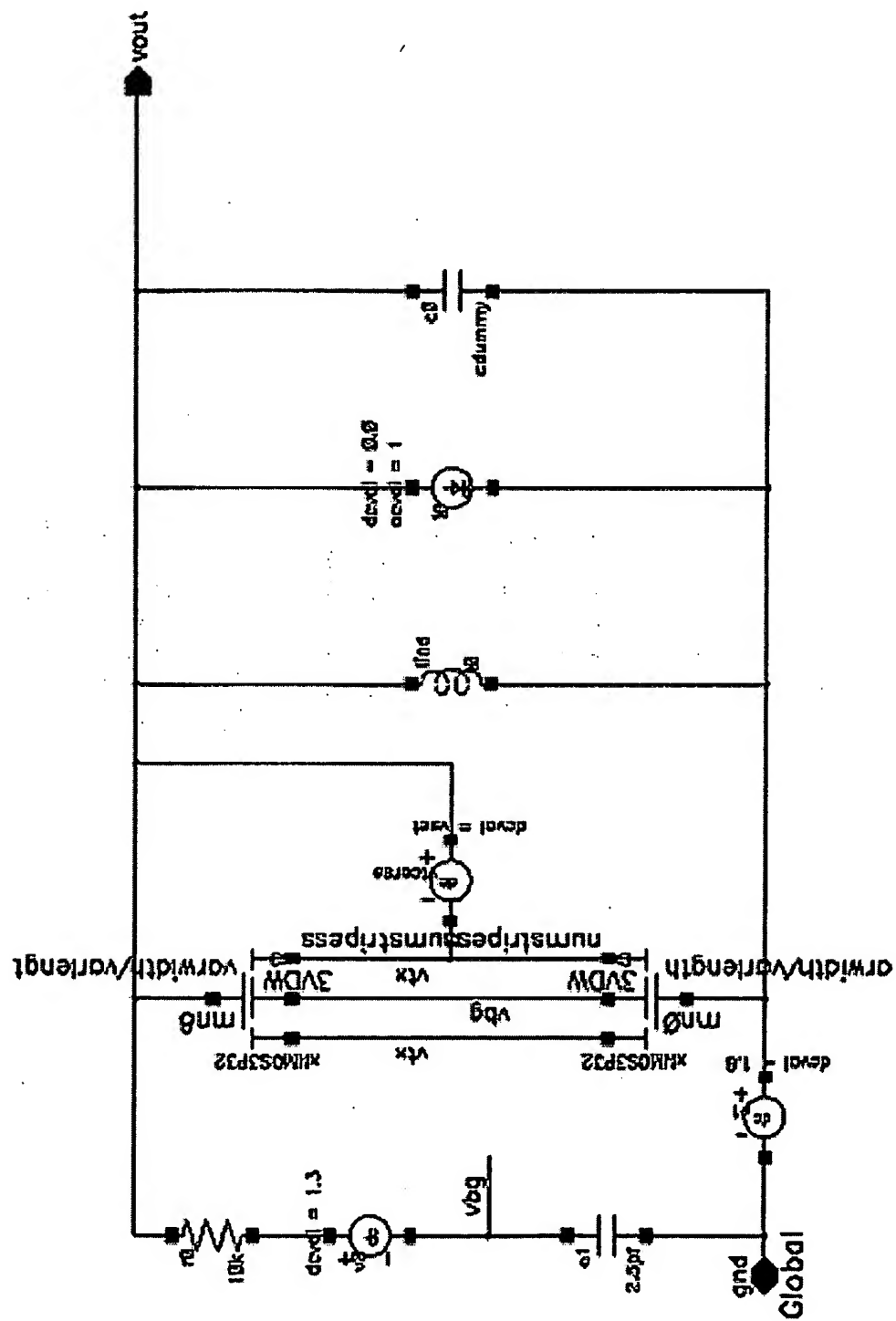


Figure 9



**Figure 10**

Calculate small signal tuning range, varactor Q, C(V) for D-S EO-0.5V 1200C  
 36.8MHz 2.85L 40.1 100C varactor, ideal 0.36uH inductor test  
 Process: nominal Temp: 25.0 deg C  
 Min Vtune: -1.10V P<sub>o</sub>: 7.926 GHz VarQ: 184.8 Z<sub>tank</sub>: 2567.42 Ohms -3271 kHz/V  
 Max Vtune: -2.00V P<sub>o</sub>: 10.444 GHz VarQ: 199.6 Z<sub>tank</sub>: 4463.47 Ohms 11 kHz/V  
 Tuning Range: 2510.65 GHz 27.42 % about P<sub>avg</sub>: 9.195 GHz GainRatio: -118.0:1

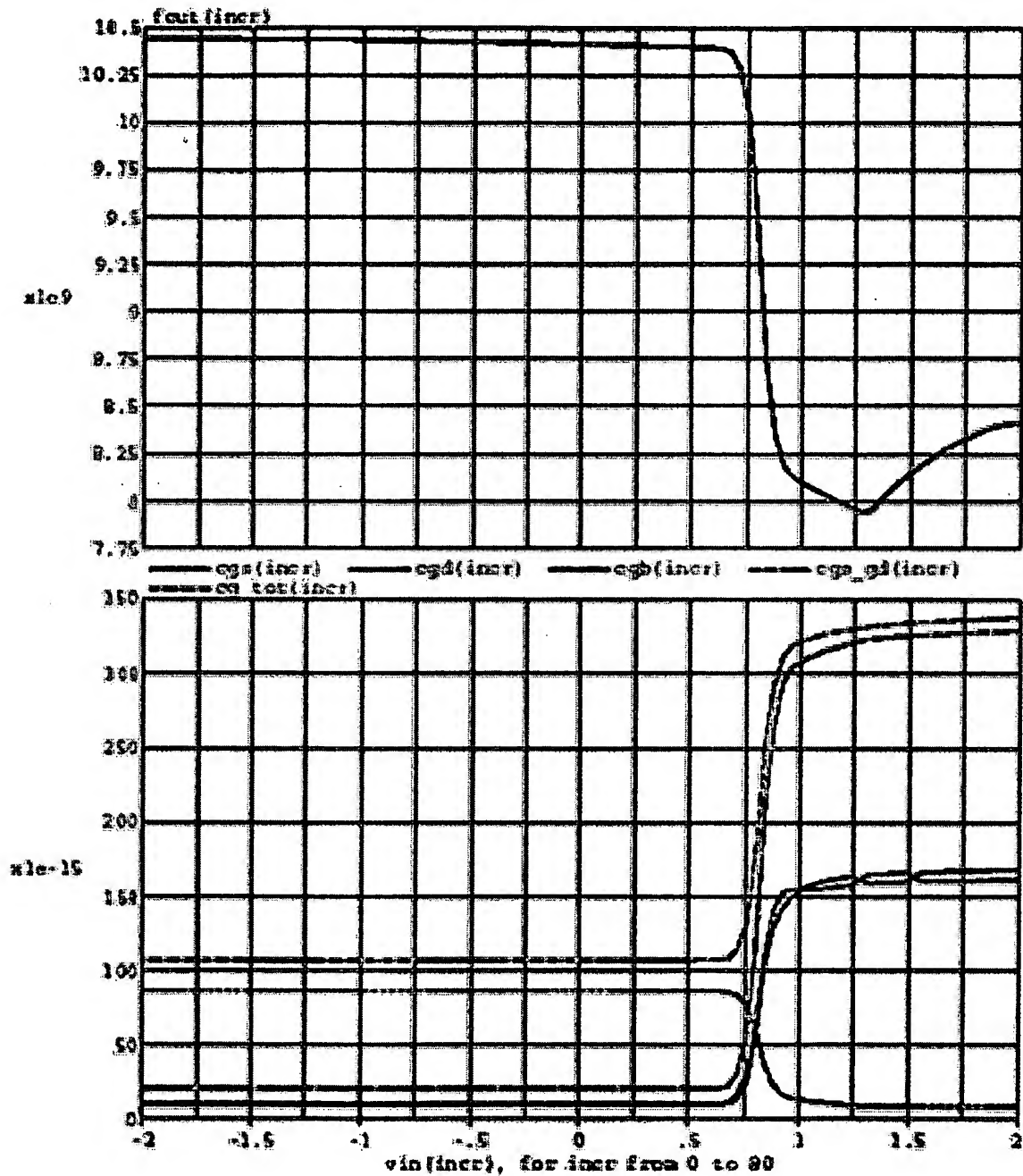


Figure 11

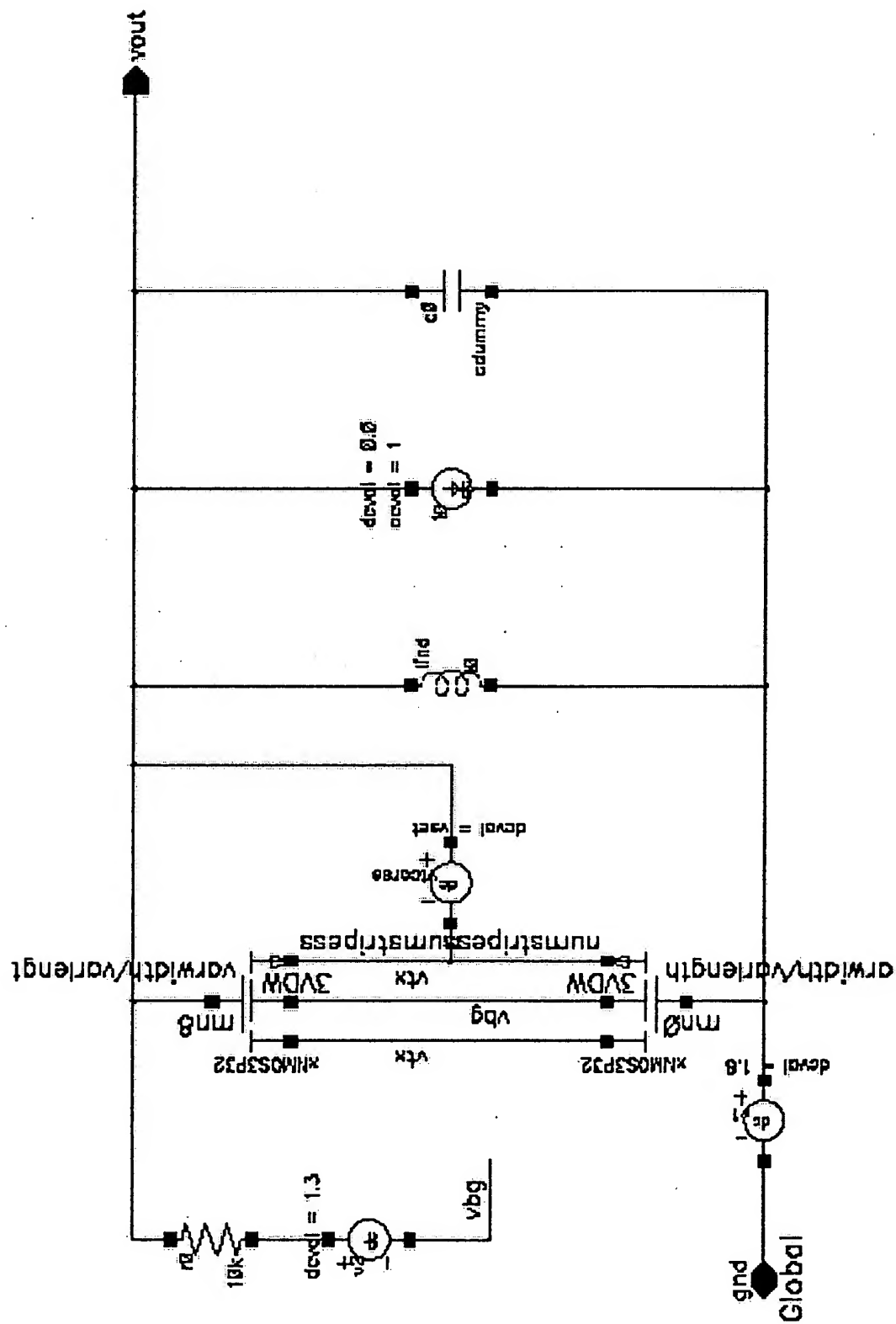


Figure 12

Calculate small signal tuning range, varactor Q, C(V) for D-5 BVM-20, 1-10005  
 26.0GHz 2.00L, 40.1 MHz varactor, ideal 0.16nH inductor tank  
 Process: nominal Temp: 25.0 deg C  
 Min Vtune: 1.00V  $P_c$ : 9.211 GHz  $VarQ$ : 185.0  $Z_{tank}$ : 2400.90 Ohms 24 MHz/V  
 Max Vtune: -2.00V  $P_c$ : 11.124 GHz  $VarQ$ : 1006.6  $Z_{tank}$ : 25247.86 Ohms 2 MHz/V  
 Tuning Range: 1912.92 MHz 18.01 dB about  $f_{avg}$ : 10.167 GHz GainRatio: 16.2:1

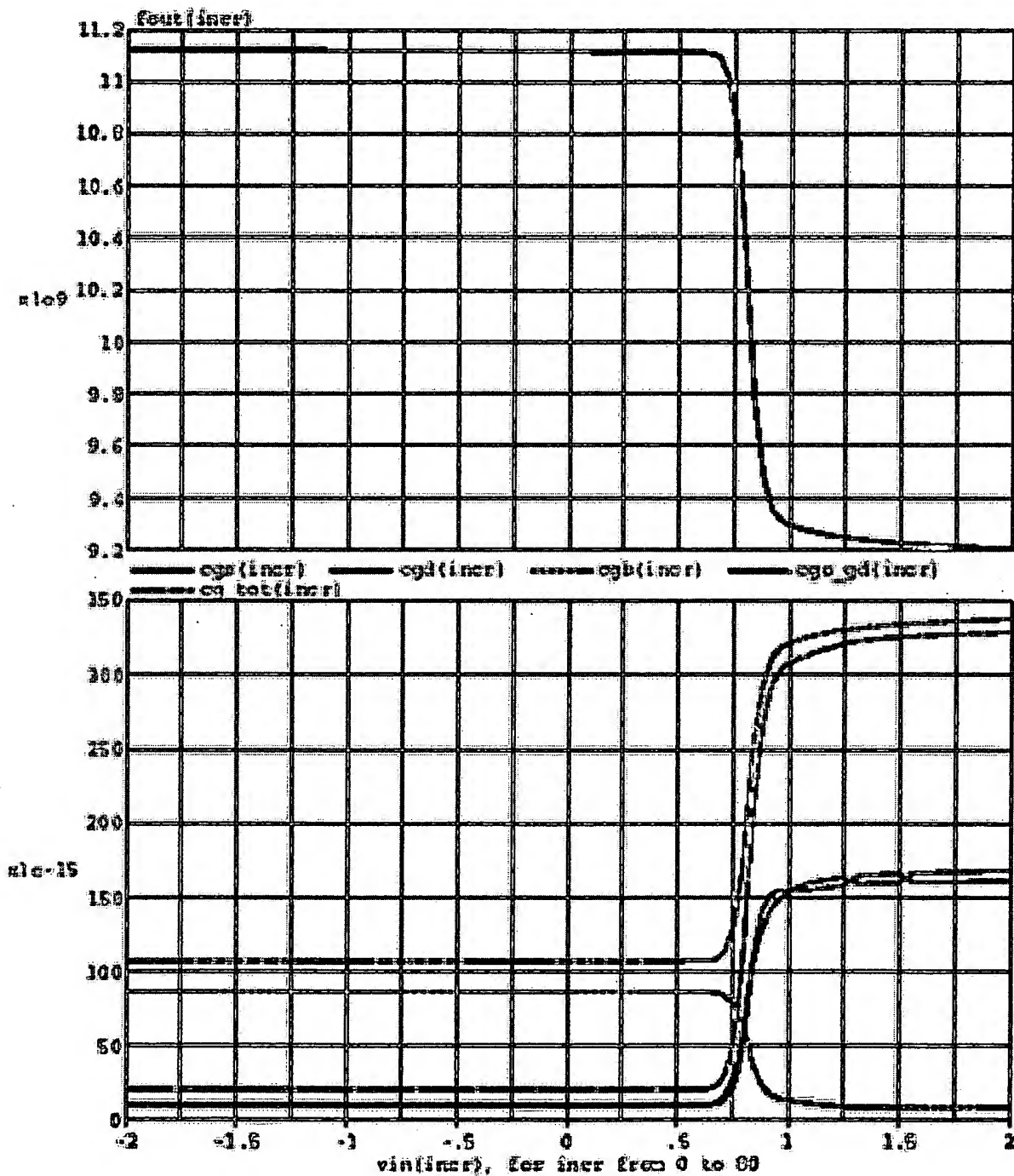


Figure 13

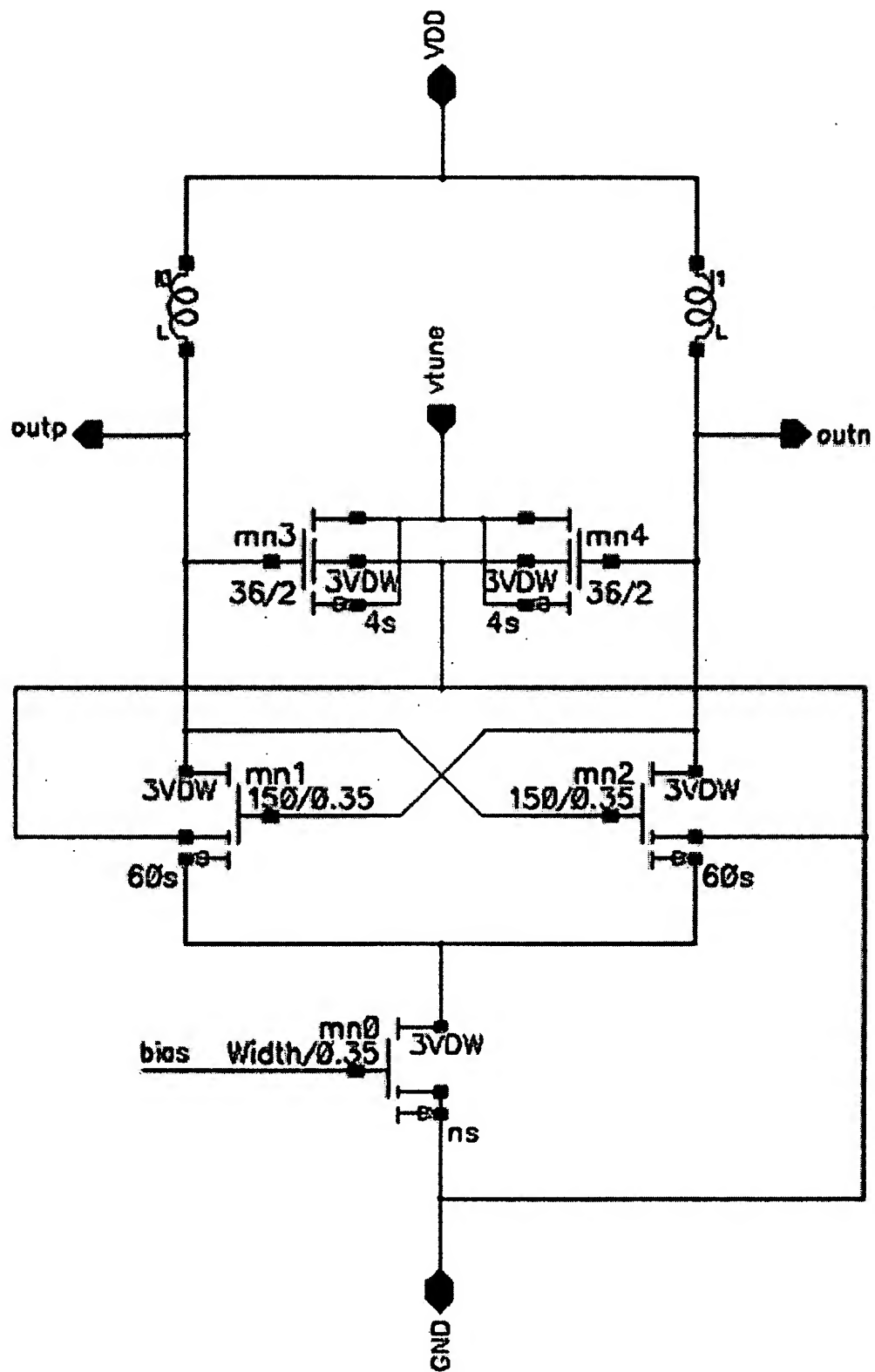


Figure 14





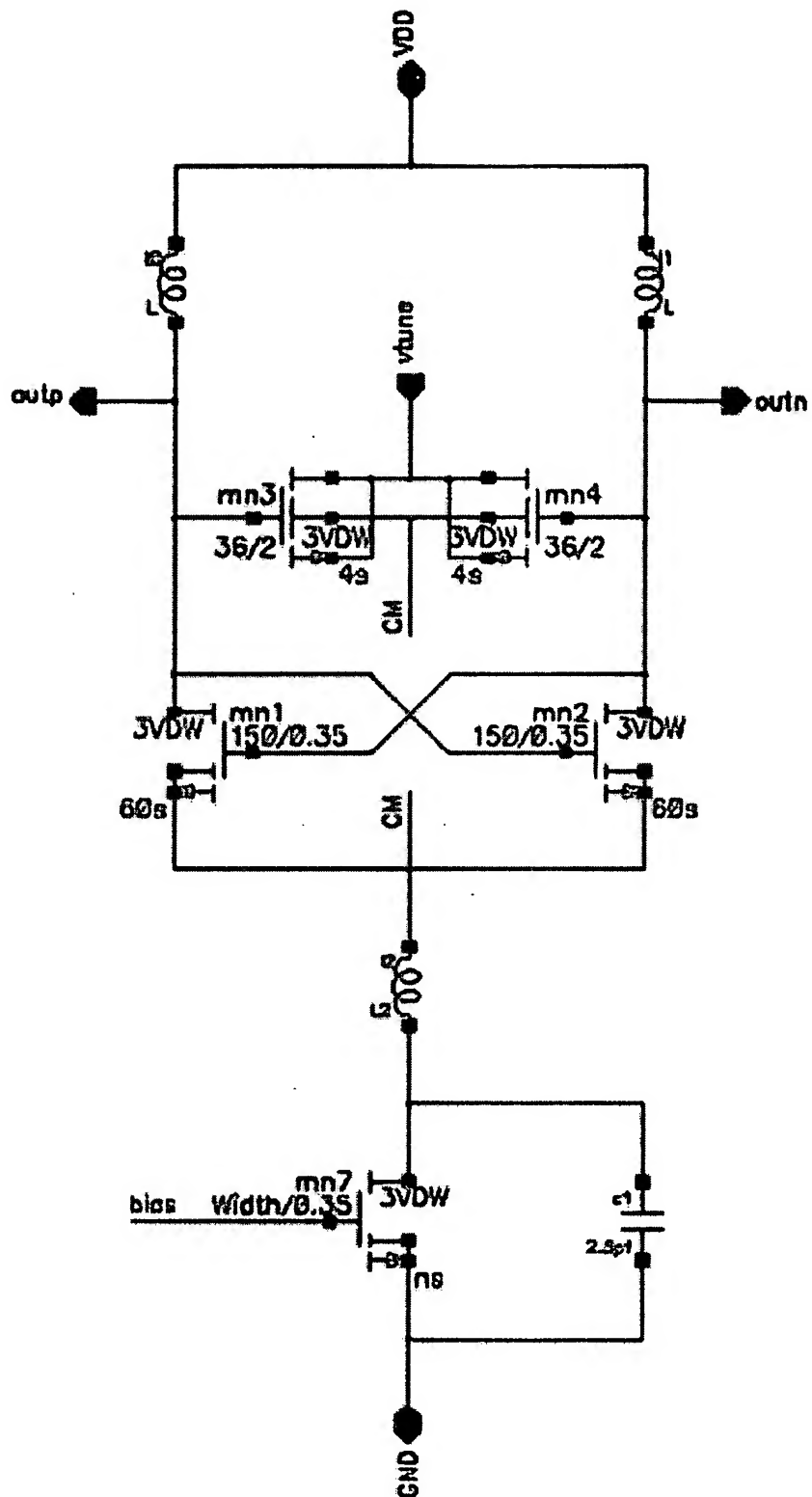


Figure 16

[illegible]

### Figure 17

DVM: 4 bit group Vref: 0.9 Vref: 1.2 Vref: 1.2 VCore: 1.2 VCore: 1.2 VCore: 1.2 V  
 120.8 MHz 111.12 MHz MOS switch NM cap: 1.58, real 0.22mH inductor tank  
 Process: nominal Temp: 65.0 deg C Vdd: 1.8 VCore: 0.9 VCore: 0.9  
 Min Per: 0.025 GHz Max Per: 0.025 GHz  
 Min Vpp: 2.715 V Max Vpp: 2.715 V  
 BW: 0.00 GHz (0.040) 160 0.00 MHz CPU: 160 0.00 MHz Time: 0.000 1.7 sec RETCL: 1e-06

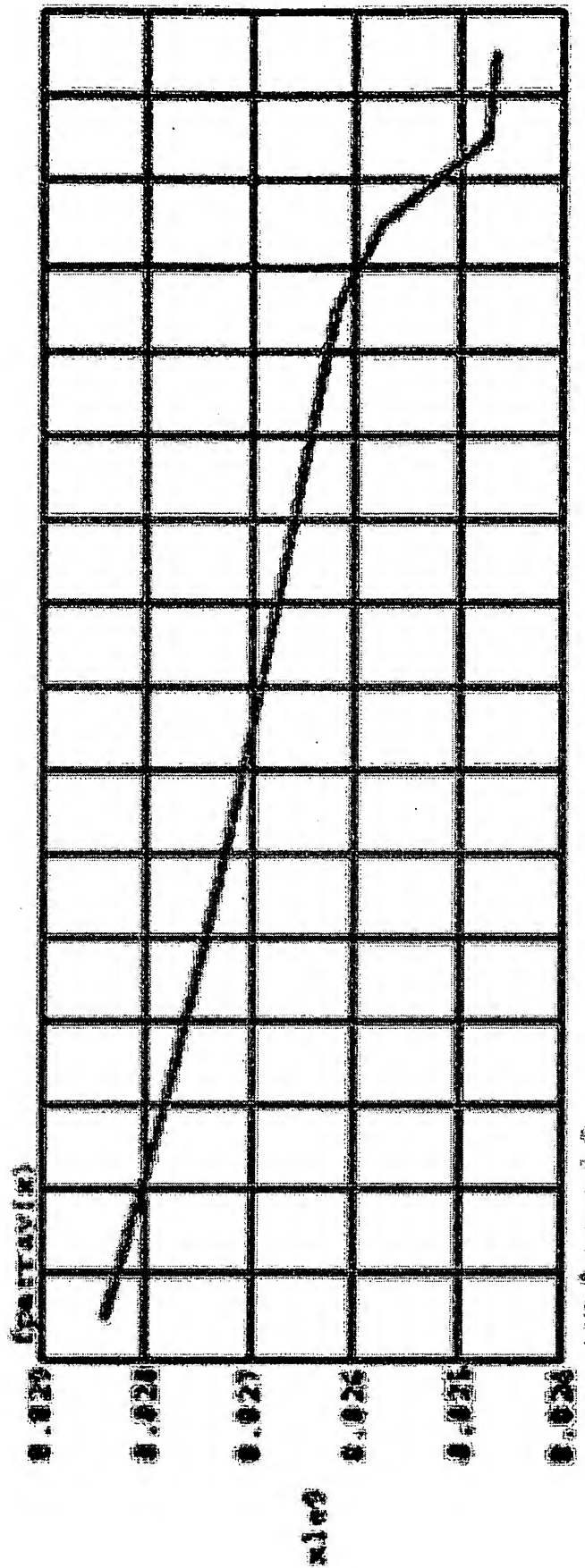


Figure 18

DPOB: 4 bit wrap Vrf: 0.8 Vell: 1.2 Vrf2: 1.2 VCoell: 1.2 VCoell: 0.8  
 120.8 MHz 1.11.12e IMOS switch MIN cap: 16H. real 1.22M inductor tank  
 Process: nominal Temp: 65.0 deg C Vdd: 1.8 VCoell: 0.9 Vrfine: 0.9  
 Min Pz: 0.838 GHz Max Pz: 0.860 GHz  
 Min Vppd: 2.712 V Max Vppd: 2.726 V  
 BW: 0.00 GHz (0.02%) Iob: 0.11 MHz CPU: 100% Time: 70891.4 secg RELEV: 3e-06

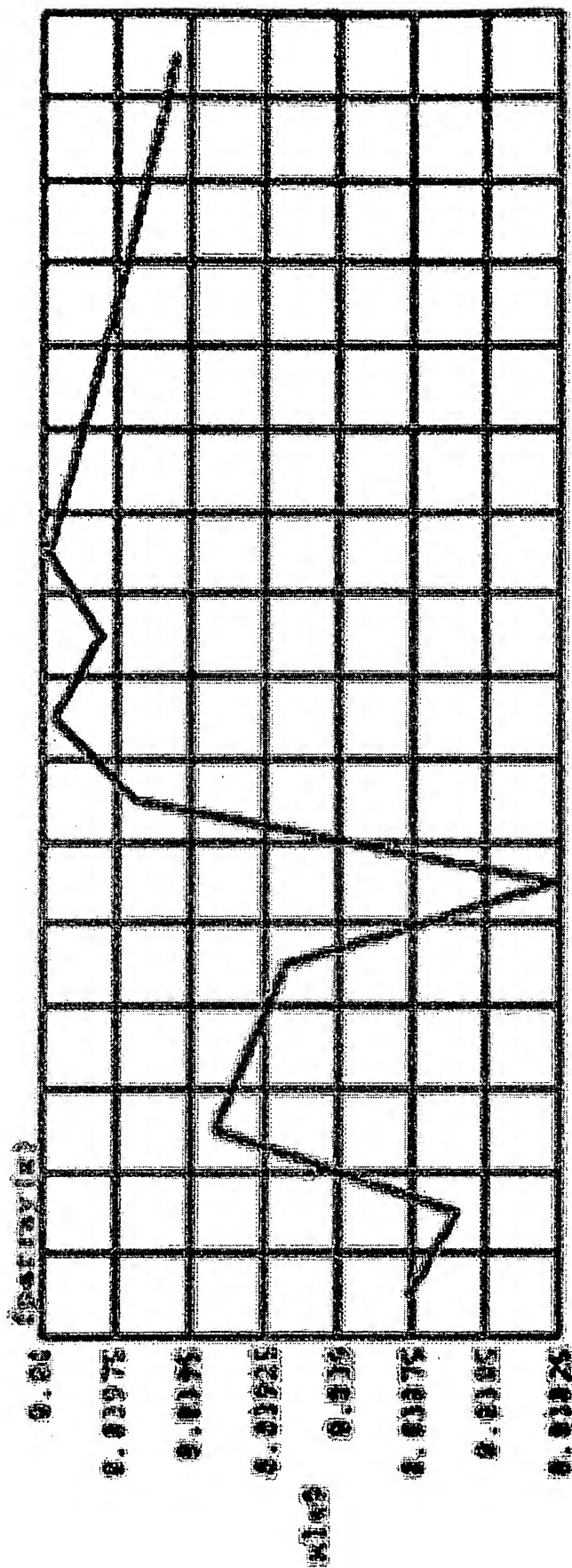


Figure 19



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